



BENTONVILLE PUBLIC SCHOOLS

HEAT INDEX GUIDELINES AND POLICY

Wet Bulb Temperature Guidelines for Athletics					
Wet bulb temperature will be determined by approved digital psychrometer					
** Indoor practices must adhere to the guidelines**					
Level	Heat Index WBT Fahrenheit	Heat Index WBT Celsius	Precautions and Practice Lengths	Breaks (work:rest ratio)	Fluids
1 White	< 64 ⁰	< 17 ⁰	Low Risk; Practice sessions reasonable	As Needed or 6 : 1	As Desired
2 Green	65 ⁰ – 72 ⁰	18 ⁰ – 22 ⁰	Moderate Risk; Use Caution for practice sessions and monitor on basis of risk factors	(4-6:1)	Cold Water

3 Yellow	73 ⁰ – 81 ⁰	23 ⁰ – 28 ⁰	High Risk; Use increased caution for practice sessions and consider practice lengths and intensity level	(2-3:1)	Cold Water
4 Red	81 ⁰ – 86 ⁰	28 ⁰ – 32 ⁰	Very High Risk; Consider rescheduling or delaying the event until safer conditions prevail; if the event must take place, be on high alert. Take steps to reduce risk factors (e.g., more and longer rest breaks, reduced practice time, reduced exercise intensity, access to shade, minimal clothing and equipment, cold tubs at practice site, etc.).	(1-2 :1)	Cold Water / Gatorade
5 Black	> 86 ⁰	> 32 ⁰	Extreme Risk; No Practice	No Practice	No Practice
** 10 degrees Fahrenheit must be added for athletes in full gear, not acclimatized, or other extraneous factors due to the aggressive nature of the policy**					
*Guidelines adopted from the National Federation of State High School Association recommendations for Heat Stress and Athletic Participation, United States Marine Corps Heat Index, and from the National Athletic Training Association Consensus Position Statement on Exertional Heat Illnesses					

Guidelines for Outdoor Extracurricular Activities

DURING EXTREME HOT AND HUMID WEATHER

1. Each program shall have and use a digital psychrometer, or a similar device for measuring environmental factors. All activities will monitor and follow guidelines.
2. Practices and games should be held early in the morning and later in the evening to avoid times when environmental conditions are generally more severe.
3. An unlimited supply of cold water shall be available to participants during practices and games.
 1. Any request by a student to receive water will be granted without question by the coach or supervisor.
 2. Hydration and fluid replacement is a daily process. Students should hydrate themselves before, during, and after practice. Meals should include an appropriate amount of fluid intake in addition to a healthy diet.
4. Give adequate rest periods.
 1. Football players shall be allowed to remove helmets.
 2. Shoulder pads should be removed if conditions warrant.
5. Gradually acclimatize participants to the heat.
 1. Research indicates 80% acclimatization may be achieved in 7-10 days, but could take up to 14 days. In some cases, it may take several weeks to become fully acclimated.
 2. The length and intensity of practice should be adjusted according to the WBT until acclimatization occurs.
6. Athletic participants **should weigh in** before practice and weigh out after to monitor water loss to identify those who are becoming dehydrated.
7. Participants should wear clothes that are light in weight and color.

8. Students who need careful monitoring include:

1. Overweight students
2. Weight control problems (fluctuation)
3. Those taking over-the-counter and prescription medication
4. Students who have done absolutely no exercise at all

9. Be familiar with all heat related symptoms and corresponding treatments.

10. Be familiar with any emergency and 911 procedures.

11. Be familiar with the Wet Bulb Temperature Chart and utilize guidelines determining length of practice and rest periods.

12. After each practice and/or game, coaches should monitor the dressing room to insure each student/athlete does not require medical attention.

HEAT ILLNESS SYMPTOMS AND TREATMENTS

Heat illness is used to define several types of afflictions suffered when an individual experiences a rising body temperature and dehydration. Following are the different forms identified by the N.A.T.A.

	Symptoms	Treatments
Heat Cramps	<ul style="list-style-type: none">- Muscle spasms caused by an imbalance of water and electrolytes in muscles- Usually affects the legs and abdominal muscles	<ul style="list-style-type: none">- Rest in a cool place- Drink plenty of fluids- Proper stretching and massaging- Application of ice in some cases
Heat Exhaustion	<ul style="list-style-type: none">- Can be a precursor to heat stroke- Normal to high temperature- Heavy sweating- Skin is flushed or cool and pale- Headaches, dizziness- Rapid pulse, nausea, weakness- Can occur without prior symptoms, such as cramps	<ul style="list-style-type: none">- Get to a cool place immediately and out of the heat- Drink plenty of fluids- Remove excess clothing- In some cases, immerse body in cool water
Heat Stroke	<ul style="list-style-type: none">- Body's cooling system shuts down- Increase core temperature of 104°F or greater- If untreated it can cause brain damage, and even death- Sweating stops- Shallow breathing and rapid pulse- Possible disorientation or lose consciousness	<ul style="list-style-type: none">- Call 911 immediately- Cool bath with ice packs near large arteries, such as neck, armpits, groin- Replenish fluids by drinking or intravenously, if needed

	- Possible irregular heartbeat and cardiac arrest	
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Heat Illness	Definition/Description	Signs/Symptoms	What to Do
Muscle (Heat) Cramps	Occurs during or after intense exercise. Athlete will experience acute, painful, involuntary muscle contractions typically in the arms, legs, or abdomen.	Dehydration Thirst Fatigue Sweating Muscle cramps	<ul style="list-style-type: none"> • Stop all activity and sit quietly in a cool place. • Drink clear juice or a sports drink. • Do not engage in exercise/strenuous activity for a few hours after cramps subside, as this may lead to heat exhaustion or heat stroke. • Seek medical attention if heat cramps do not subside in 1 hour.
Heat Syncope	Occurs as result of exposure to high temperatures. Typically occurs during the first 5 days of acclimation to physical activity in the heat. May also occur after a long period of standing after physical activity.	Dehydration Fatigue Fainting Lightheadedness Tunnel Vision Pale or sweaty skin Decreased pulse rate	<ul style="list-style-type: none"> • Lie down in a cool place. • Drink clear juice or a sports drink.
Heat (Exercise)	The inability to continue exercising that is associated with heavy sweating,	Normal or elevated body-core temp (97-104°F)	<ul style="list-style-type: none"> • Seek medical attention immediately if symptoms are severe, the athlete has existing heart problems or high blood

Exhaustion	<p>dehydration, energy depletion, and sodium loss.</p> <p>*Frequently occurs in hot, humid conditions</p>	<p>Dehydration</p> <p>Dizziness/Lightheadedness</p> <p>Headache</p> <p>Nausea/Diarrhea</p> <p>Weakness</p> <p>Persistent muscle cramps</p> <p>Profuse sweating</p> <p>Chills</p> <p>Cool, clammy skin</p>	<p>pressure.</p> <ul style="list-style-type: none"> You may attempt to cool the athlete using: cool, non-alcoholic beverages (as directed by physician), rest, cool shower/bath/sponge bath, moving to an air conditioned environment, and wearing lightweight clothing.
Heat Stroke	<p>Life-threatening unless promptly recognized and treated. Occurs as a result of prolonged heat exposure while engaging in physical activity. Symptoms are a result of the body shutting down when it is no longer able to regulate temperature naturally.</p>	<p>Same Symptoms as Heat Exhaustion and:</p> <p>High body-core temp (>104°F)</p> <p>Change in Mood (e.g., apathy, irrational)</p> <p>Hot and wet or dry skin</p> <p>Increased heart rate</p> <p>Confusion</p>	<ul style="list-style-type: none"> If any symptoms are evident-CALL 9-1-1 or seek immediate medical assistance. Move the athlete to a shady area. Cool the athlete rapidly using whatever methods you can: immerse the victim in a tub of cool water; place the person in a cool shower, spray the victim with cool water from the hose, sponge the person with cool water; fan the athlete. Monitor body temperature and continue to cool the athlete until temp drops to 101-102°F. Continue until medical professionals arrive and take over, if medical attention is delayed; call the emergency room for further instructions.

References

Brinkley, H.M., Beckett, J., Casa, D.J., Kleiner, D.M., & Plummer, P.E., (2002). National Athletic Trainers' Association position statement: Exertional heat

illnesses. Journal of Athletic Training, 37 (3), 329-343.

Center for Disease Control (2003). Hot weather health emergencies. Retrieved from <http://www.cdc.gov/nceh/hsb/extremeheat/heatillness.htm>. (June 14, 2004).

Important information with online resources to help you learn more about the prevention of heat illnesses:

- Coaches need to stay on top of athletes and make sure they are actually using water break and re-hydrating during-just by giving athletes water breaks does not mean they are drinking enough (see <http://www.nlm.nih.gov/medlineplus/heatillness.html>).
- Take the necessary steps toward preventing heat illness. Visit http://www.gssiweb.com/tackleheat/pdf/danger_zone.pdf for tips on keeping your athletes safe.
- Encourage your athletes to come to practice/camp physically fit and acclimatized to exercising in the heat. This and nine other tips for heat illness prevention are described. Visit <http://www.gssiweb.com/reflib/refs/571/prevheattips.cfm?pid=38&CFID=488365&CFTOKEN=55576146> for ten ways to beat the heat.
- **Safety tips for two-a-days** regarding what and how often to drink, as well as tips on how to be prepared and manage two-a-days. (See <http://www.gssiweb.com/reflib/refs/280/heatnewsletter.cfm?btid=2>).

As summer programs begin and pre-season approaches, coaches, parents, and athletes should be reminded to stay properly hydrated-this means drinking when you may not feel thirsty and avoiding carbonated or sugar-laden beverages! Heat illnesses can be life threatening. Be aware and be prepared. Be familiar with the “Heat Illnesses: Signs, Symptoms, & What to Do” chart and be sure to follow the advice of your athletic trainers and team physicians about exercising in the heat and humidity. The NFHS has also published hydration recommendations and prevention and awareness guidelines (see http://www.nfhs.org/scriptcontent/va_custom/SportsMedicine/HeatStressFlyers.pdf and http://www.nfhs.org/ScriptContent/VA_Custom/va_cm/contentpagedisplay.cfm?Content_ID=211&SearchWord=Heat%20Stress).